

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/672,751  
Applicants : Paul VAN RIEL et al.  
Filed : September 26, 2003  
Title : METHOD OF ESTIMATING ELASTIC AND  
COMPOSITIONAL PARAMETERS FROM SEISMIC AND  
ECHO-ACOUSTIC DATA  
Group Art Unit : 2857  
Examiner : Anthony Gutierrez

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. §§1.56, 1.97 and 1.98, Applicants hereby submit this Information Disclosure Statement (IDS) together with a completed Form PTO/SB/08A.

This application is a continuation of parent United States Patent Application No. 09/817,807, filed March 26, 2001, now United States Patent No. 6,665,615, which was a continuation of PCT Application No. PCT/EP 00/10464, filed October 22, 1999, which designated, *inter alia*, the United States. This IDS identifies the references that were submitted and cited by either the Applicants or the Examiner during the prosecution of the parent application. Pursuant to 37 C.F.R. § 1.98(d), copies of the references are not submitted.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on January 9, 2004.

Ruth A. Walkup

(Typed Name of Person Mailing Paper)

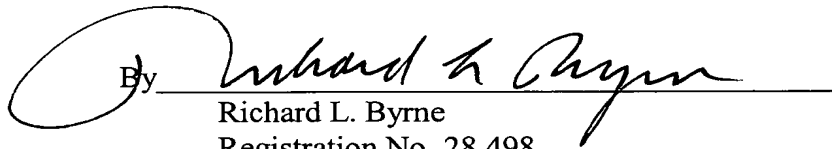
*Ruth A. Walkup*  
Signature

01/09/2004  
Date

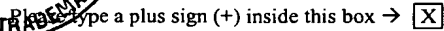
Pursuant to 37 C.F.R. § 1.97(b)(3), no fee is believed to be due for the submission of this Information Disclosure Statement, as it is being submitted before the mailing date of a first Office Action on the merits. Nevertheless, the Commissioner for Patents is hereby authorized to charge any additional fees which may be required to Deposit Account No. 23-0650. One (1) original and two (2) copies of this Information Disclosure Statement are enclosed.

Respectfully submitted,

WEBB ZIESENHEIM LOGSDON  
ORKIN & HANSON, P.C.

By 

Richard L. Byrne  
Registration No. 28,498  
Attorney for Applicants  
700 Koppers Building  
436 Seventh Avenue  
Pittsburgh, PA 15219-1818  
Telephone: 412-471-8815  
Facsimile: 412-471-4094  
E-mail: [webblaw@webblaw.com](mailto:webblaw@webblaw.com)



Approved for use through 10/31/2001. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE  
Respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

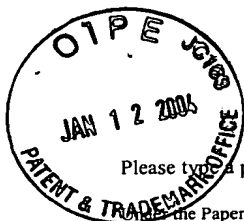
(use as many sheets as necessary)

Application Number	10/672,751
Filing Date	September 26, 2003
First Named Inventor	Paul VAN RIEL et al.
Group Art Unit	2857
Examiner Name	Anthony Gutierrez
Attorney Docket Number	702-031290

U.S. PATENT DOCUMENTS

## FOREIGN PATENT DOCUMENTS

{W0098873.1}



Please type a plus sign (+) inside this box → ☒

Approved for use through 10/31/2001. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				Application Number	10/672,751
				Filing Date	September 26, 2003
				First Named Inventor	Paul VAN RIEL et al.
				Group Art Unit	2857
				Examiner Name	Anthony Gutierrez
Sheet	2	of	2	Attorney Docket Number	702-031290

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, cite and/or country where published.	T <sup>2</sup>
	AI	SIMMONS et al., "Waveform-based AVO inversion and AVO prediction-error," <i>Geophysics</i> 61(6) (November-December 1996) pp:1575-1588	
	AJ	DRUFUCA et al., "Ambiguities in AVO inversion of reflections from a gas-sand," <i>Geophysics</i> 60(1) (January-February 1995) pp: 134-141	
	AK	BULAND et al., "AVO inversion of Troll Field data," <i>Geophysics</i> 61(6) (November-December 1996) pp: 1589-1602	
	AL	YILMAZ, "Seismic data analysis, processing, inversion, and interpretation of seismic data," <i>Investigations in Geophysics, Society of Exploration Geophysicists II</i> (1987) pp: 1807-1839, Stephen M. Doherty, Editor	
	AM	SMITH et al., "Weighted stacking for rock property estimation and detection of gas," <i>Geophysical Prospecting</i> 35 (1987) pp: 993-1014	
	AN	FATTI et al., "Detection of gas in sandstone reservoirs using AVO analysis: A 3-D seismic case history using the Geostack technique," <i>Geophysics</i> 59(9) (September 1994) pp: 1362-1376	
	AO	AKI, Keiiti and RICHARDS, Paul G., "Quantitative seismology, theory and methods," I (1979) pp: 153-154, W.H. Freeman and Company, San Francisco	
	AP	CASTAGNA et al., "Offset-dependent reflectivity-theory and practice of AVO analysis," <i>Investigations in Geophysics, Society of Exploration Geophysicists</i> , 8 (1993) pp: 3-11	
	AQ	GOODWAY et al., "Improved AVO fluid detection and lithology discrimination using Lamé petrophysical parameters; "8Δ", "Δ", & "8/:" fluid stack", from P and S inversions," <i>Canadian Society of Exploration Geophysicists Ann. Meeting</i> (1998) pp: 183-186	
	AR	XU et al., "A new velocity model for clay-sand mixtures," <i>Geophysical Prospecting</i> 43 (1995) pp: 91-118	
	AS	XU et al., "A physical model for shear-wave velocity prediction," <i>Geophysical Prospecting</i> 44 (1996) pp: 687-717	
	AT	DEBEYE et al., "L <sub>p</sub> -norm deconvolution <sup>1</sup> ," <i>Geophysical Prospecting</i> 38 (1990) pp: 381-403	
	AU	GILL et al., "Practical optimization," <i>Systems Optimization Lab., Dept. of Operations Research, Stanford Univ.</i> (1981) pp: 144-154, Academic Press, Inc. (Harcourt Brace Jovanovich Pub.)	
	AV	GILL et al., "Constrained nonlinear programming," <i>G.L. Nemhauser et al. Eds., Handbooks in OR &amp; MS</i> 1 (1989) pp: 171-210, Elsevier Science Pub. B.V. (North-Holland)	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.